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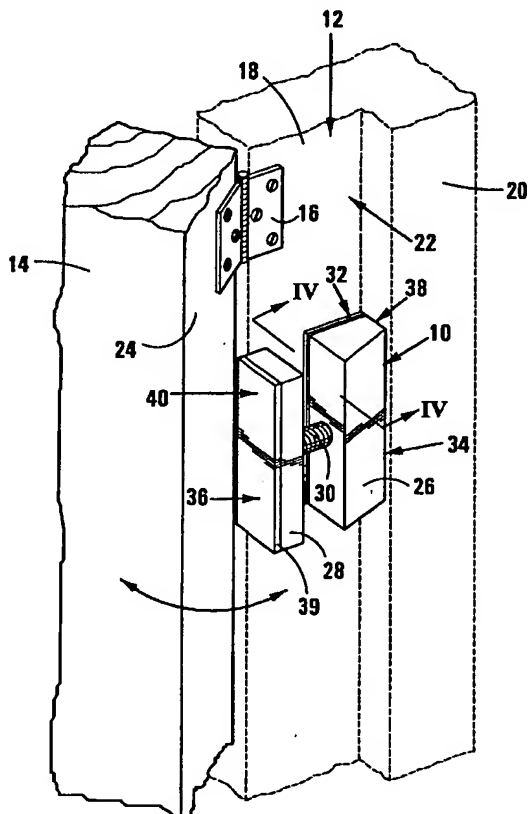
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(54) Title: A DOORSTOP



(57) Abstract: A doorstop (10) is adapted for use with a doorjamb (12) and a door (14) that is hinged thereto. The doorjamb comprises a post member (18) and a shoulder (20). The doorstop (10) comprises a stop member having a first body portion (26) and a second body portion (28) and a screw-threaded rod (30) which extends between the body portions, permitting the body portions to be screwed relative to one another for adjusting the effective length of the stop member. The body portion (26) defines an abutment face (38) that can be positioned in abutment with the shoulder (20) of the doorjamb, whereas the body portion (28) defines an abutment face (40) which can be positioned in abutment with an inner edge (24) of the door. The doorstop thus acts between the door and the shoulder of the doorjamb to hold the door open. The doorstop includes a securing arrangement (32) comprising complementary strips of VELCRO material, for releasably securing the doorstop to the doorjamb.

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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

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## A DOORSTOP

### FIELD OF INVENTION

THIS INVENTION relates to a doorstop.

5 Any reference herein to a door must be interpreted to mean any leaf such as a door, window or the like, that is mounted to a frame surrounding an opening so as to be displaceable between an open and a closed position.

### BACKGROUND ART

10 Numerous types of prior art doorstops are known. One such type consists of a wedge which is placed under a door to prevent the door from closing. A problem associated with wedges is that if the floor surface is relatively smooth, the wedges often slide on the floor surface if a force is applied to the door. It is also necessary to bend over to place the wedge under the door. A further problem with the use of wedges is that wedges cannot be used with doors in the absence of an underlying floor, such as when the floor gives way to stairs.

15 US Patent 4,831,688 discloses a doorstop that can be located on a door hinge to prevent the door hinge and thereby the door, from closing. This doorstop allows the door to be closed partially until the doorstop prevents further closure.

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A problem with this doorstop is that it is ineffective when a relatively large force, caused, for example, by a gust of wind acting on the door, is applied to the door in a door-closing direction. The doorstop is thus not designed to keep a door open at a predetermined angle, but rather to prevent the door from closing completely. The doorstop cannot be used in the absence of a hinge and must therefore be designed specifically for use with hinges of different sizes and configurations. Further, as the doorstop requires a hinge, the height at which the doorstop can be positioned in a doorway, is dependent on the height at which the hinge is mounted.

US Patent 5,581,844 discloses a doorstop that can be magnetically clamped onto a doorjamb leaf of a hinge on a door to obstruct the door from closing totally into the doorjamb. It is stated that this prevents the door from closing onto fingers of children. A problem with this doorstop is that it is ineffective in instances wherein a relatively large force acts on the door, such as that caused by sudden gust of wind. The doorstop is designed to make contact with the door only upon the door achieving a predetermined partially closed position. Hence, a relatively large force acting on a fully opened door in a door-closing direction, will cause the door to gain significant momentum before contacting the doorstop. Also, the forces acting on the doorstop, are applied generally perpendicularly to the magnetic forces holding the doorstop in place, thereby resulting in it being relatively easy to dislodge the doorstop. The purpose and operation of the doorstop is to prevent the door from closing fully and it is thus not intended to hold the door in an open position. Further, the doorstop can only be used with a hinge and more particularly, with a hinge of a ferromagnetic material. It will thus not work with brass or aluminium hinges. The position at which the doorstop can be located in a doorway is also determined by the position of the hinge on which it is located, in use.

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It is an object of the present invention to overcome the shortcomings of the abovementioned prior art.

### SUMMARY OF INVENTION

5 According to the invention there is provided a doorstop for use with and in combination with a doorjamb comprising a post member and a shoulder formation which projects from the post member, and a door that is hingedly mounted to the doorjamb, the door having an inner edge that can be seated against the post member when the door is in a closed position, the doorstop comprising a stop member defining a first abutment face and a second abutment face, the stop member being releasably securable to the doorjamb in an arrangement wherein 10 the first abutment face thereof is located proximate the shoulder formation and the second abutment face is located proximate the inner edge of the door when it is in a fully open position, the doorstop acting between the inner edge of the door and the shoulder formation of the doorjamb to hold the door fully open.

15 The doorstop may have a configuration wherein a length dimension of the stop member measured between the first and second abutment faces, is adjustable.

The doorstop may include a first body portion defining said first abutment face, a second body portion defining said second abutment face and adjustable connecting means for connecting the first and second body portions in an arrangement wherein the body portions are displaceable relative to one another 20 for adjusting said length dimension of the stop member.

The connecting means may be in form of a rod defining an external screw thread and having two ends which are each connected to a different body portion, with at least one of the body portions defining an internally-threaded socket in which

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one of the ends of the threaded rod can be screwed.

One of the body portions of the doorstop may include securing means for releasably securing said one body portion to the doorjamb.

5 The securing means may be in the form of two complementary securing strips of "VELCRO" material wherein a first securing strip is secured to an inner side of said one body portion and a second securing strip is securable to the doorjamb so as to permit releasable engagement of the securing strips, thereby to secure the body portion to the doorjamb, in use.

10 Said first securing strip may be permanently secured to said one body portion, the second securing strip having two major sides, with a first major side having "VELCRO" material for engagement with the first securing strip and a second major side having an adhesive applied thereto for securing the second securing strip to the doorjamb.

15 The second major side of the second securing strip may have a peel-off backing sheet which can be removed to expose the adhesive thereof to permit it to be secured to the doorjamb.

#### BRIEF DESCRIPTION OF THE DRAWINGS

20 Further features of the invention are described hereinafter by way of a non-limiting example of the invention, with reference to and as illustrated in the accompanying diagrammatic drawings. In the drawings:

Figure 1 shows a schematic three-dimensional view of a doorstop in accordance with the invention, illustrating the manner in which the doorstop is mounted to

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a doorjamb;

Figure 2 shows a schematic three-dimensional view of the door stop of Figure 1;

Figure 3 shows a schematic, partly sectional side view of the rear side of the doorstop of Figure 1, sectioned along section line III-III of Figure 2 of the drawings; and

Figure 4 shows a schematic sectional end view of the doorstop of Figure 1 of the drawings, sectioned along section line IV-IV of Figure 1.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the drawings, a doorstop in accordance with the invention, is designated generally by the reference numeral 10. The doorstop 10 is adapted for use with and in combination with a doorjamb designated generally by the reference numeral 12 and a door 14 that is hingedly mounted to the doorjamb 12 via a hinge 16. The doorjamb 12 comprises a post member 18 and a shoulder 20 that projects from the post member 18 into a doorway in which the doorjamb is mounted. As such, the post member 18 and the shoulder 20 of the doorjamb, together define an L-shaped seat formation 22 in which an inner edge 24 of the door, can be seated when the door is closed.

The doorstop 10 comprises a stop member having a first body portion 26, a second body portion 28 and a rod 30 having an external screw thread, for connecting the body portions to one another, and a securing arrangement 32 for releasably securing the first body portion 26 of the stop member, to the doorjamb 12.

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The stop member has two spaced, opposed ends, with the first body portion 26 defining a first end 34 and the second body portion 28 defining a second end 36. More particularly, the first end 34 defines an abutment face 38 that can be positioned in abutment with the shoulder 20 of the doorjamb 12, and the second end 36 defines an abutment face 40 against which the inner edge 24 of the door 14 can abut, for keeping the door open, in use. Further, the second portion 28 includes a rubber bumper strip 39 which defines the abutment face 40. In use, the bumper strip provides for impact absorption when the inner edge 24 of the door contacts the doorstop and also enhances "grip" between the abutment face 40 and the inner edge of the door, thereby resisting sliding of the door relative to the abutment face 40.

The threaded rod 30 has a head 42 that is fixedly secured to the second body portion 28 of the stop member. The first body portion 26 defines a threaded socket 44 in which the rod 30 can be screwed thereby to adjust the length of the stop member, measured between the first and second ends thereof. Hence, by screwing the rod into the socket, the length of the stop member can be reduced and similarly, by screwing the rod 30 out of the socket 44, the length of the stop member can be increased.

In use, adjustment of the length of the stop member permits the stop member to be used with doors/doorjambs of different sizes and configurations. Doors are often mounted to doorjambs differently and inaccurately. By allowing for adjustment of the length of the doorstop, the doorstop can accommodate different gaps between the doors and doorjambs to which the doors are mounted. Further, by adjusting the length of the stop member, the position of the door at which the door will be prevented from closing further, can be adjusted.

The securing arrangement 32 comprises a first securing strip 46 of VELCRO



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material that is permanently secured to a rear side of the first body portion 26 of the stop member by an adhesive layer 47, and a second securing strip 48 of complementary VELCRO material, that is releasably securable to the first securing strip 46. The second securing strip 48 has two major sides, with a first side having VELCRO material 50 for engagement with the VELCRO material of the first securing strip 46, and a second side that has an adhesive layer 52 applied thereto for releasably securing the second securing strip to the doorjamb 12. The second securing strip 48 is provided with a "peel-off" backing sheet 54 which covers the adhesive layer and which can be removed to expose the second side of the second securing strip to permit it to be secured to the doorjamb. It will be appreciated that the adhesive applied to the second side of the second securing strip, will form a stronger bond with the doorjamb than a bond that is formed, in use, between the strips of VELCRO material when engaged. This allows the stop member to be removed from the doorjamb, leaving the second securing strip 50 on the doorjamb. When required, the stop member can be re-attached to the second strip. In use, the securing arrangement 32 thus provides for the stop member to be positioned on the doorjamb 12 at position between the inner edges of the door and the shoulder of the doorjamb.

The doorstop in accordance with the invention, is adapted for holding a door fully open (typically at right angles to the plane of the door opening). In use, the abutment faces of the stop member are placed in abutment with the inner edge of the door and the shoulder of the doorjamb, respectively. Hence, a relatively large force caused, for example, by a gust of wind acting on the door, will act in a direction along the length dimension of the stop member. The doorstop thus acts between the inner edge of the door and the shoulder of the doorjamb, for holding the door open. The doorstop thus provides a secure and direct means for holding the door open.

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It will be appreciated that the exact configuration of the doorstop may vary greatly while still incorporating the essential features as defined and described hereinabove. The Applicant envisages that the doorstop may be produced in a range of different sizes and shapes for accommodating doorjambs and doors having different configurations and sizes.

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The doorstop in accordance with the invention, provides a cheap, effective doorstop that is simple and convenient to install. It can also be mounted at any desired height to a doorjamb.

**CLAIMS:**

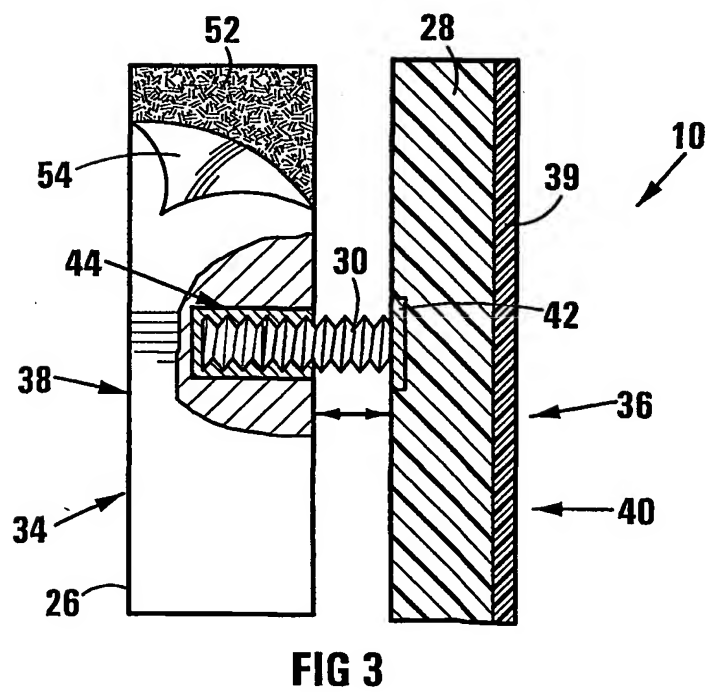
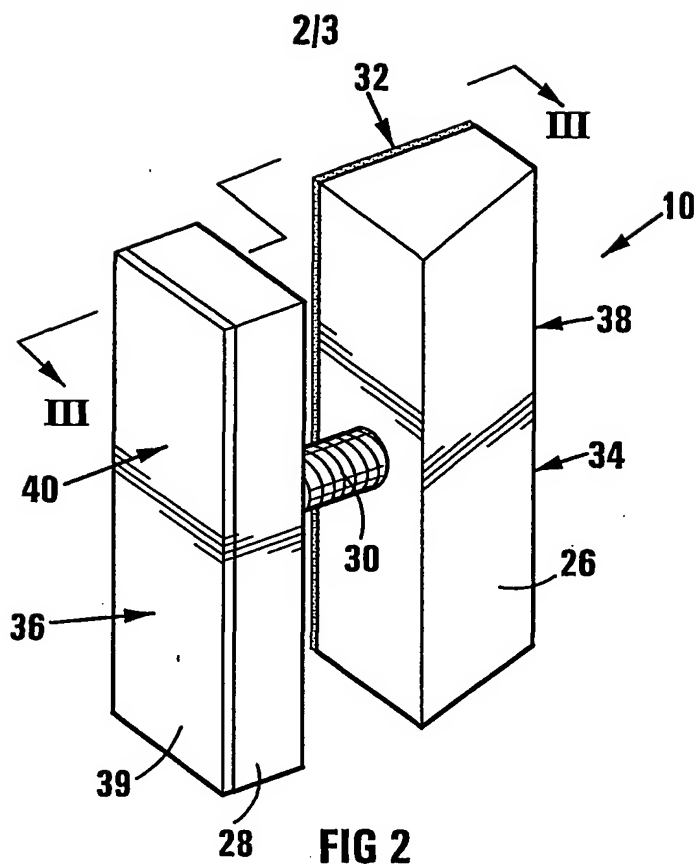
1. A doorstep for use with and in combination with a doorjamb comprising a post member and a shoulder formation which projects from the post member, and a door that is hingedly mounted to the doorjamb, the door having an inner edge that can be seated against the post member when the door is in a closed position, the doorstep comprising a stop member defining a first abutment face and a second abutment face, the stop member being releasably securable to the doorjamb in an arrangement wherein the first abutment face thereof is located proximate the shoulder formation of the doorjamb and the second abutment face is located proximate the inner edge of the door when it is in a fully open position, the doorstep acting between the inner edge of the door and the shoulder formation of the doorjamb to hold the door fully open.
2. A doorstep as claimed in Claim 1, which has a configuration wherein a length dimension of the stop member measured between the first and second abutment faces, is adjustable.
3. A doorstep as claimed in Claim 2, which includes a first body portion defining said first abutment face, a second body portion defining said second abutment face and adjustable connecting means for connecting the first and second body portions in an arrangement wherein the body portions are displaceable relative to one another for adjusting said length dimension of the stop member.
4. A doorstep as claimed in Claim 3, wherein the connecting means is in the form of a rod defining an external screw thread and having two ends which are each connected to a different body portion, with at least one of

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the body portions defining an internally-threaded socket in which one of the ends of the threaded rod can be screwed.

5. A doorstop as claimed in Claim 3 or Claim 4, wherein one of the body portions of the doorstop includes securing means for releasably securing said one body portion to the doorjamb.
6. A doorstop as claimed in Claim 5, wherein the securing means is in the form of two complementary securing strips of "VELCRO" material wherein a first securing strip is secured to an inner side of said one body portion and a second securing strip is securable to the doorjamb so as to permit releasable engagement of the securing strips, thereby to secure the body portion to the doorjamb, in use.
7. A doorstop as claimed in Claim 6, wherein said first securing strip is permanently secured to said one body portion, the second securing strip having two major sides, with a first major side having "VELCRO" material for engagement with the first securing strip and a second major side having an adhesive applied thereto for securing the second securing strip to the doorjamb.
8. A doorstop as claimed in Claim 7, wherein the second major side of the second securing strip has a peel-off backing sheet which can be removed to expose the adhesive thereof to permit it to be secured to the doorjamb.
9. A new doorstop substantially as described in the specification.
10. A doorstop substantially as described in the specification, with reference to and as illustrated in the accompanying diagrammatic drawings





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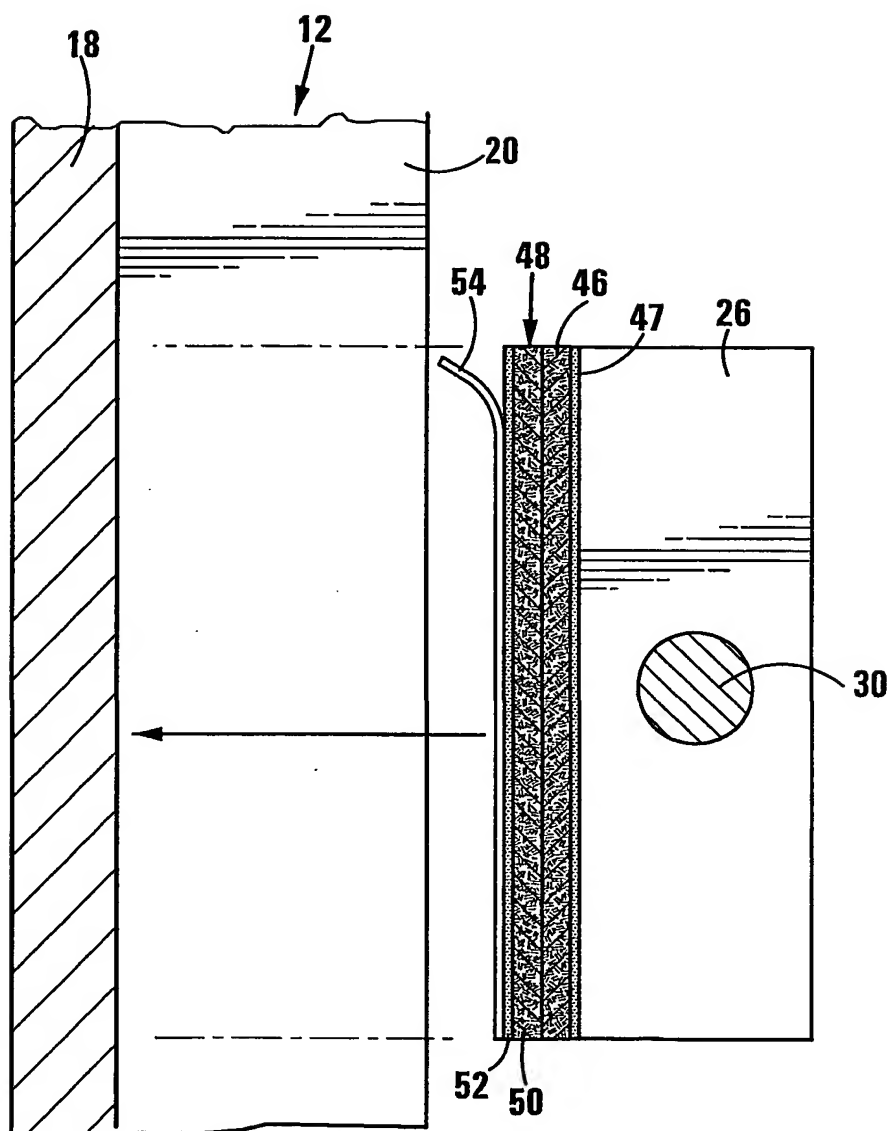


FIG 4

## INTERNATIONAL SEARCH REPORT

International Application No.

PCT/IB 01/01906

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 E05F5/02 E05F5/04

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 E05F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 83 967 A (LEVI T. HOWELL) 10 November 1868 (1868-11-10) page 1, paragraph 2; figure 2	1
X	US 5 581 844 A (RAHEB ROBERT ET AL) 10 December 1996 (1996-12-10) cited in the application column 4, line 1 - line 44; figure 2	1
X	US 1 409 137 A (HUNKINS WILLIAM B ET AL) 7 March 1922 (1922-03-07) page 1, line 66 - line 88; figures 3,4	1-5
X	US 4 208 841 A (STARKS EMMETT A) 24 June 1980 (1980-06-24) column 3, line 41 - line 63; figure 1	1,6-8



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
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- "O" document referring to an oral disclosure, use, exhibition or other means
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- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
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Date of the actual completion of the international search

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International Application No

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 83967	A	NONE	
US 5581844	A	10-12-1996	NONE
US 1409137	A	07-03-1922	NONE
US 4208841	A	24-06-1980	AU 5129379 A 17-04-1980